10

15

20

25

30

- 1. An isolated polypeptide comprising an unbroken sequence of amino acids from SEQ ID. NO. 1, or 2, characterised by an ability to complex with a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1.
- 2. An isolated polypeptide comprising an unbroken sequence of amino acids from SEQ. ID. NO. 1, or 2, characterised by an ability to elicit an immune response from human lymphocytes.
- 3. An isolated polypeptide as claimed in either one of claims 1 and 2, the polypeptide being a nonapeptide wherein the amino acid adjacent to the N-terminal amino acid is L or M, preferably L, and the C-terminal amino acid is L, V, or I, preferably L.
- 4. A nonapeptide comprising an unbroken sequence of amino acids from SEQ. ID. NO. 1, or 2, wherein the amino acid adjacent to the N-terminal amino acid is L or M, preferably L, and the C-terminal amino acid is L, V, or I, preferably L, other than a nonapeptide having the amino acid sequence CLGLSYDGL.
- 5. A nonapeptide as claimed in either of claims 3 and 4, wherein the amino acid in position 3 is Y and/or the amino acid in position 4 is D and/or the amino acid in position 5 is G and/or the amino acid in position 7 is E and/or the amino acid in position 8 is H.
- 6. A polypeptide as claimed in any one of claims 1-5, other than a nonapeptide having any one of amino acid sequences:
 - (a) FLLFKYQMK
 - (b) FIEGYCTPE; of
 - (c) GLEGAQÀPL.

IJKSSKI

30

- 7. A polypeptide as claimed in any one-of claims 2-6, further characterised by an ability to complex with a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1.
- 8. A decapeptide comprising a nonapeptide as claimed in any of claims 3-6 and, preferably, an unbroken sequence of amino acids from SEQ. ID. NO. 1, or 2.
 - 9. A nonapeptide having the amino acid sequence GLYDGMEHL or GLYDGREHS, preferably GLYDGMEHL.
 - A decapeptide having the amino acid sequence GLYDGMEHLI or GLYDGREHSV, preferably GLYDGMEHLI.
 - 11. An isolated polypeptide of up to about 93 amino acids in length, characterised by comprising a nonapeptide or a decapeptide as claimed in any of claims 3-10.
 - 12. A polypeptide as claimed in claim 11, comprising of an unbroken sequence of amino acids from SEQ. ID. NO. 1, or 2.
 - 13. A polypeptide as claimed in any of the preceding claims, wherein the unbroken sequence is from SEQ. ID. NO. 1.
- 14. A polypeptide as claimed in any of the preceding claims and capable of eliciting an immune response from human lymphocytes.
 - 15. A polypeptide as claimed in claim 14 and capable of eliciting an immune response from human lymphocytes when complexed with a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1.
 - 16. A polypeptide as claimed in claim 14 or claim 15, wherein said immune response is an cytolytic response from human T-lymphocytes.



An isolated polypeptide or protein comprising a polypeptide as claimed in 17. any of claims 1-16, wherein the amino acid sequence of said isolated polypeptide or protein is not that set out in either of SEQ. ID. NOs. 1 and 2 or that coded for by nucleotides 334-918 of SEQ. ID. NO. 7.

5

An isolated polypeptide or protein which is a functionally equivalent homologue to a polypeptide or protein as claimed in any of claims 1-17, wherein the amino acid sequence of sald isolated polypeptide or protein is not that set out in either of SEQ. ID. NOs. 1 and 2 or that coded for by nucleotides 334-918 of SEQ. ID. NO. 7.

10

15

An isolated nucleic acid molecule comprising a nucleotide sequence coding for a polypeptide or protein as claimed in any of claims 1-17, or a complimentary nucleotide sequence, wherein said nucleotide sequence is not that set out in any of SEQ. ID. NOs. 3, 4, 5, 6 or 7.

20. A nucleic acid molecule as claimed in claim 19 and comprising an unbroken sequence of nucleotides from SEQ. ID. NO. 3, 4 or 5, or a complimentary sequence, or an RNA transcript of said nucleic acid molecule.

20

21. A nucleic acid molecule as claimed in claim 19 or claim 20, wherein said nucleotide sequence encodes a plurality of epitopes or a polytope.

22. An expression vector comprising a nucleic acid molecule as claimed in any of claims 19-21 operably linked to a promoter. 25

An expression vector as claimed in claim 22, further comprising a nucleotide sequence coding for a major histocompatibility complex molecule type HLA-A2, preferably HIA-A2.1, a cytokine or a co-stimulatory molecule, or a bacterial or viral genome or a portion thereof.

30

24. A host cell transformed or transfected with an expression vector as claimed in claim 22 or claim 23.

15

20

- 25. A host cell as claimed in claim 24, transformed or transfected with an expression vector coding for a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2, 1, a cytokine or a co-stimulatory molecule.
- 26. A polypeptide-binding agent which selectively binds or is specific for an isolated polypeptide or protein as claimed in any of claims 1-18.
- 27. A polypeptide-binding agent as claimed in claim 26, comprising an antibody, preferably a monoclonal antibody or an antibody fragment specific for an isolated polypeptide as claimed in any of claims 1-18.
- 28. A polypeptide-binding agent as claimed in claim 26 or claim 27 which selectively binds or is specific for a complex of a polypeptide as claimed in any of claims 1-18 and a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1, but which does not bind said major histocompatibility molecule alone.
- 29. A polypeptide-binding agent as claimed in any of claims 26-28, comprising a cytolytic T-cell which is specific for a complex of a polypeptide as claimed in any of claims 1-18 and a major histocompatibility complex molecule type HLA-A2, preferably HLA-A2.1.
- 30. A polypeptide or protein as claimed in any of claims 1-18, an isolated nucleic acid molecule as claimed in any of claims 19-21, an expression vector as claimed in either of claims 22 or 23, a hour sell as claimed in either of claims 24 or 25, or a polypeptide binding agent as claimed in any of claims 26-29, for use in the therapy, prophylaxis or diagnosis of tumours.
 - 31. A pharmaceutical composition for the prophylaxis, therapy or diagnosis of tumours comprising a polypeptide or protein as claimed in any of claims 1-18, a nucleic acid molecule as claimed in any of claims 19-21, an expression vector as claimed in either of claims 22 or 23, a host cell as claimed in either of claims 24 or

546 J

, Þ

Coto

5

10

15

20

25, or a polypeptide binding agent as claimed in any of claims 26-29, optionally in admixture with a pharmaceutically acceptable carrier and optionally further comprising a major histocompatibility molecule type HLA-A2, preferably HLA-A2.

- 32. A pharmaceutical composition for the prophylaxis, therapy or diagnosis of tumours comprising a polypeptide or protein as claimed in any of claims 1-18 complexed with a major histocompatibility molecule, HLA, and presented on the surface of an APC, preferably a dendritic cell, wherein said complex is formed by pulsing said APC with polypeptide or protein.
- 33. A cell, preferably an APC, and more preferably, a dendritic cell, which has been pulsed with a polypeptide or protein as claimed in any of claims 1-18 to present on its surface said polypeptide or protein as a complex with a major histocompatibility molecule, FILA.
- 34. A pharmaceutical composition as claimed in any of claims 31 and 32 further comprising a co-stimulatory molecule.
- 35. A method of diagnosing disease, preferably cancer, comprising contacting a biological sample isolated from a subject with an agent that is specific for a polypeptide or protein as claimed in any of claims 1-18, or a nucleic acid molecule as claimed in any of claims 19-21 and assaying for interaction between the agent and any of the polypeptide, protein or nucleic acid molecule either free in or forming an integral part of the sample as a determination of the disease.
- 36. A method as claimed in claim 35, wherein the agent is a polypeptide-binding agent as claimed in any of claims 26-29.
- 37. A method of producing a cytolytic T-cell culture reactive against tumour cells, comprising removing a lymphocyte sample from an individual and culturing the lymphocyte sample with a polypeptide or protein as claimed in any of claims 1-

5ub 30

5

10

15

15, an expression vector as claimed in either of claims 22 or 23, or a host cell as claimed in either of claims 24 or 25.

- 38. A product comprising cytolytic T-cells reactive against a tumour cell expressing an antigen comprising a polypeptide or protein as claimed in any of claims 1 to 18, for use in the prophylaxis, therapy or diagnosis of tumours.
- 39. A product as claimed in claim 38 and obtained or obtainable by a method as claimed in claim 37.
- 40. A method of treating tumours in a patient comprising administering a composition as claimed in any of claims 30, 31, 32, 34, 38 or 39 to the patient in an amount effective to control or prevent sumour growth.